REMARKS

Upon entry of this Amendment, claims 1-13 are all the claims pending in the application. Claim 13 has been added. Claims 1-12 presently stand rejected. In particular, claims 1-10 are rejected for precisely the same reason as asserted in the office action dated August 11, 2003, that is, claims 1-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over so-called Admitted Prior Art in view of Suganuma (USP 5,767,609). Claims 1-5 are further rejected under 35 U.S.C. § 112, second paragraph for apparently failing to provide proper antecedent basis for one of the terms and new claims 11 and 12 are rejected, similar to claims 1-10, as being unpatentable over Admitted Prior Art in view of Suganuma.

For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

Formalities

The Examiner is respectfully requested to return the initialed PTO/SB/08 for the Information Disclosure Statement filed on October 28, 2003. The Examiner has returned another copy of the initialed PTO/SB/08 for the Information Disclosure Statement filed on May 31, 2001 along with paper no. 9.

Argument

In regard to the new rejection of claims 1-5 under 35 U.S.C. § 112, second paragraph, Applicant has amended claim 1 to delete the term "manual", thus curing the antecedency issue. Withdrawal of the rejection is, thus, kindly requested.

In regard to the rejection of claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of Suganuma, the Examiner states, on page 2 of the office action under Response to Arguments, that "Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection." However, the ground(s) of rejection asserted in the instant office action are, verbatim, the same as the ground(s) of rejection asserted in the previous office action, but for one additional sentence found on page 3 of the office action. Accordingly, Applicant maintains the previous arguments presented in the Amendment Under 37 C.F.R. § 1.111, filed November 12, 2003, and addresses the additional ground asserted by the Examiner.

Specifically, in addition to the grounds previously asserted in the Office Action dated August 11, 2003, the Examiner now further contends that "since replacement of a variable resistor by a pulse generator is known, it would have been obvious that input means (32) and control panel means (33) described in the admitted prior art can be made compatible with the pulse generator." However, even if it is known to replace a variable resistor with a pulse generator, under the circumstances disclosed in Suganuma, it does not inherently follow that the claimed pulse input means and control panel control means are rendered obvious in view of the resistance value input means (32) and the control panel control means (33), respectively, disclosed in the background section of the application and shown in FIG. 5.

In particular, assuming, *arguendo*, that a skilled artisan finds it obvious to replace the variable resistor (25) of FIG. 5 with a pulse generator, the resistance value input means (32) and the control panel control means (33) of FIG. 5 would still not meet the requirements of the claim.

For example, on page 2 of the specification, i.e., within the background section of the application, it is disclosed that the resistance value input means (32) is "for detecting and digitizing an analog value inputted from the variable resistor (25)." This function is not even remotely similar to the claimed function of the pulse input means, which is "for receiving the command pulses outputted from said manual pulse generator and calculating an amount of change in the received command pulses per unit time." Accordingly, the claimed pulse input means is neither taught nor suggested by the proposed replacement of Suganuma's pulse generator with the variable resistor disclosed in the so-called admitted prior art device.

Furthermore, on page 2 of the specification, it is disclosed that the control panel control means (33) is "for analyzing an input signal obtained from the key input means (31) and the variable resistance value input means (32) and outputting data according to an input from the outside." This stated function is not even remotely similar to the recited function of the claimed control panel control means, which is "for calculating the output frequency based on the amount of change in the command pulses per unit time outputted from said pulse input means." Accordingly, the claimed control panel control means is neither taught nor suggested by the proposed replacement of Suganuma's pulse generator with the variable resistor disclosed in the so-called admitted prior art device.

For at least the reasons set forth above, the subject matter recited in claim 1 is neither taught nor suggested by the proposed combination of Suganuma and the disclosed conventional device. Accordingly, claim 1 is patentable over the asserted prior art and the rejection to claim 1 should be withdrawn.

Claim 2 is patentable at least by virtue of its dependence from allowable claim 1. Additionally, however, claim 2 recites independently patentable subject matter. In particular, claim 2 recites the control apparatus of claim 1 wherein the control panel control means is operable to perform setting operations when data is outputted from the pulse input means even when the selected operation mode is a mode other than the setting mode. The Examiner cites the driving device disclosed at column 4, lines 42-46 of Suganuma as teaching the added requirement of claim 2. Indeed, at column 4, lines 42-46 of Suganuma a driving device is disclosed that comprises "a drive frequency setting means for setting the drive frequency." It is not disclosed, however, in either Suganuma or the conventional device disclosed in the application, that the drive device can perform setting operations when data is outputted from the pulse input means even when the selected operation mode is a mode other than the setting mode, as required. Accordingly, claim 2 is patentable over the proposed prior art combination for this additional reason.

Claim 3 is patentable at least by virtue of its dependence from allowable claim 1. Additionally, however, claim 3 recites independently patentable subject matter. In particular, Applicant submits that the chart (FIG. 7) cited from Suganuma does not meet the requirements of the claim, either explicitly or implicitly and, thus the proposed combination does not render the claim obvious. Specifically, as recognized by the Examiner, FIG. 7 is a chart illustrating frequency values for an ultrasonic motor as a function of drive voltage. However, claim 3 requires more than the fact that the frequency changes as function of drive voltage. Claim 3 requires that a scaling factor "of an amount of change of the frequency setting value" be changed

"to the amount of change in the command pulses in response to the amount of change in the command pulses per unit time."

As disclosed, for example, at pages 14 and 15 of the present specification and in reference to FIG. 3, the amount of change in the frequency setting value is dependent on the number of command pulses received per unit time. As shown, for example, in FIG. 3 when the number of pulses received within a 100 ms window is 1, 2, 3, 4 or 5, a normal setting mode is achieved where the amount of change in the frequency setting is 0.1, 0.2, 0.3, 0.4 or 0.5, respectively. Alternatively, when the number of pulses received within a 100 ms window is 6, 7, 8, 9 or 10, an acceleration setting mode is achieved where the amount of change in the frequency setting is 1.0, 2.0, 3.0, 4.0 or 5.0, respectively. Neither Suganuma nor the background section of the application disclose this feature. Accordingly, for this additional reason, claim 3 is patentable over the proposed prior art combination.

Claim 4 is patentable at least by virtue of its dependence from allowable claim 1. Additionally, however, claim 4 recites independently patentable subject matter. In particular, for similar reasons as those set forth above in regard to claim 3, Suganuma does not teach or suggest holding a scaling factor constant for a fixed period of time after the operation of the pulse generator is stopped. Again, the chart at FIG. 7 of Suganuma merely shows that their exists a relationship between a drive voltage and the frequency. Neither FIG. 7 nor any other portion of Suganuma discloses a scaling factor, let alone a scaling factor that is held constant for a fixed period of time after the operation of the pulse generator is stopped. Accordingly, for this additional reason, claim 4 is patentable over the proposed prior art combination.

Regarding the rejection of claim 6, Applicant submits that claim 6 is patentable for similar reasons as those set forth above in regard to claim 1. Specifically, neither the Suganuma device nor the device disclosed in the background section of the application includes "a pulse input device operable to receive the control pulse signal and determine a change in the frequency of the pulses." For at least this reason, claim 6 is patentable over the proposed combination of prior art.

Claim 7 is patentable at least by virtue of its dependence on allowable claim 6. However, claim 7 is independently allowable because the proposed combination of prior art fails to teach or suggest a device "wherein the change in frequency of the pulses of the control pulse signal is used to generate the frequency property control signals." FIG. 7 of Suganuma only shows that a relationship exists between the drive voltage and the frequency. Suganuma does not disclose that the change in the frequency of the pulses, i.e., number of pulses per unit time, is used to control frequency property control signals.

In regard to claim 8, for similar reasons to those expressed above in regard to claim 1, Applicant submits that the proposed combination of prior art fails to teach or suggest the steps of determining a change in frequency with respect to the pulses, and modifying the frequency set value for the device under control *based on the **change** in frequency*. Suganuma, at column 16, lines 11-15, discloses "[t]he F/V converter 91 converts the pulse signal from the pulse generator 130 into a voltage signal ***proportional to the frequency of said pulse signal*** and constituting a speed feedback voltage signal, for supply to the amplifier 93." Thus, in Suganuma, as discussed above, it is disclosed that the frequency of the motor depends on the frequency of the pulses from

the pulse generator, but it is not disclosed that the frequency depends on the ***change*** in frequency of the pulses. Accordingly, claim 8 is patentable. Claims 9 and 10 are patentable at least by virtue of their dependence on claim 8.

Claim 11 is patentable for similar reasons to those set forth above. Specifically, the proposed combination does not disclose either the "pulse input circuit operable to receive the command pulses outputted from said manually controlled pulse generator and ***determine an amount of change in the frequency*** of the received command pulses" or the "control circuit operable to control the speed of the device under control ***based on the amount of change in the frequency*** of the command pulses." Accordingly, claim 11 is patentable. Claim 12 is patentable at least by virtue of its dependence on claim 11.

Patentability of New Claim

For additional claim coverage merited by the scope of the invention, Applicant has added new claim 13. Applicant submits that the prior art does not disclose, teach, or otherwise suggest the combination of features contained therein. For example, none of the prior art references teach or otherwise suggest the recited control circuit or "wherein a change in the frequency control signal depends on the determined change in the frequency of the pulses." Support for the subject matter recited in new claim 13 is found at least in FIGS. 3 and 4 and the disclosure at pages 14-17 of the specification..

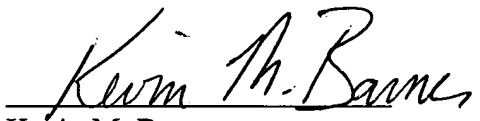
Conclusion

In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims 1-13, and such action is hereby solicited. If any points remain in issue

which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Attorney Docket No.: Q64727

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q64727

Yasuhiro SHIRAISHI , et al.

Appln. No.: 09/857,020

Group Art Unit: 2674

Confirmation No.: 7655

Examiner: Abbas I. ABDULSELAM

Filed: May 31, 2001

For: CONTROL APPARATUS

EXCESS CLAIM FEE PAYMENT LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

An Amendment Under 37 C.F.R. § 1.111 is attached hereto for concurrent filing in the above-identified application. The resulting excess claim fee has been calculated as shown below:

	After Amendment		Highest No. Previously Paid For					
All Claims	13	-	20	=		X	$18.00	= $.00
Independent	5	-	4	=	1	X	$86.00	= $86.00
					TOTAL			= **$86.00**

A check for the statutory fee of $86.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this letter is enclosed.

Respectfully submitted,

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